**REMARKS**

The specification has been amended to amend grammatical errors contained therein. No new matter has been added.

Claims 1 and 2 have been amended in order to more particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Newly presented Claim 5 limits Claim 1 in requiring that the plate have a thickness of from 1-1.5 mm. Support for newly presented Claim 5 can be found in Examples 1 and 3 of the present specification. No new matter has been added.

Affirmation is made of Applicants' election with traverse of Claims 3 and 4. The Examiner is respectfully requested to reconsider the restriction requirement as a search for the elected invention necessarily would entail a search for the non-elected invention. Favorable consideration is respectfully solicited.

Claims 1 and 2 have been rejected under 35 USC 103(a) as being unpatentable over Ghosh in view of Callister. Applicants respectfully traverse this ground of rejection and urge reconsideration in light of the following comments.

The presently claimed invention is directed to an aluminum alloy structural plate having excellent strength and corrosion resistance and which comprises, in mass %, 4.8-7% zinc, 1-3% magnesium, 1-2.5% copper and 0.05-0.25% zirconium, with the remaining consisting of aluminum and impurities. The aluminum alloy structural plate has a structure containing 25% or more of grain boundaries with misorientations of 3-10° at the plate surface.

As discussed in the present application, the present invention is based on the discovery that when an aluminum alloy having a specified composition is subjected to treatment under specified conditions, the product aluminum alloy plate has unexpectedly high strength and corrosion resistance. That is, in order to obtain an aluminum alloy structural plate

having a structure containing 25% or more of grain boundaries with misorientations of 3-10° at the plate surface, an aluminum alloy containing, in mass %, 4.8-7% zinc, 1-3% magnesium, 1-2.5% copper and 0.05-0.25% zirconium, with the remaining portion consisting of aluminum and impurities, must be subjected to process treatment steps of homogenization, hot rolling at a temperature of from 150-400°C so that the degree of working is at least 7% to produce a plate material with a specific thickness, the plate material subjected to a solution heat treatment at 450-490°C for five minutes or more and the resulting plate material cooled at a rate of at least 10°C per second. It is respectfully submitted that the prior art cited by the Examiner does not disclose the presently claimed invention.

The Ghosh reference discloses a method for imparting a very fine grain size to aluminum alloys, including alloys in the form of sheets or heavy sections such as forging billets. The aluminum alloy materials are aged and then deformed at a temperature in the range of from 200-400°C. The deformation is along the three principle axes in successive operations until a cumulative true strain of at least 8 is achieved in the alloys. However, there is no disclosure in this reference of the worked alloy being cooled at a cooling rate of at least 10°C per second or more.

The Callister reference has been cited by the Examiner to teach that "subgrain misorientation" is equivalent to "small-angle grain boundary misorientation". However, nothing in Callister suggests that in order to produce the presently claimed alloy, it must be subjected to very specific treatment steps. Therefore, it is respectfully submitted that the presently claimed invention is patentably distinguishable over Callister in combination with Ghosh.

Even though the Examiner has not made a showing of prima facie obviousness under 35 USC 103, Applicants respectfully submit that objective evidence is of record in the present

application which is more than sufficient to rebut any showing of prima facie obviousness under 35 USC 103. In Comparative Example 2 on pages 18-20 of the present specification, an alloy having a composition falling within the scope of the present claims was subjected to manufacturing conditions which were outside of the scope of the present claims. Casting, homogenization, hot forging and machining were the same as that of the present invention but, with respect to test material No. 15, a high rolling start temperature was effected. Test material No. 16 had a low temperature during repeated rolling while test material No. 17 had a low degree of working. Test material No. 18 had a high solution heat treatment temperature and test material No. 19 had a low cooling rate after solution heat treatment. As shown by the results contained in Table 8, these comparative alloys all possessed inferior mechanical properties when compared with alloy A in Example 1. As such, it is respectfully submitted that the prior art cited by the Examiner does not teach one of ordinary skill in the art how to prepare the presently claimed alloy.

Additionally, in the primary Ghosh reference, the object is to provide a fine grain structure in heavy sections of an aluminum alloy such as a bar and forging stock. In contrast thereto, the present invention is an object of providing a fine grain structure in much thinner forms of the aluminum alloy such as sheets. Ghosh requires hot deforming along its three principle axes in order to form the microstructure. In contrast thereto, the present invention forms the fine grain microstructure by rolling along one axis. In Ghosh, a plate having a thickness of from 1-1.5 mm cannot be obtained directly. Therefore, it is respectfully submitted that the presently claimed invention clearly is patentably distinguishable over this reference.

The Examiner is respectfully requested to reconsider the present application and to pass it to issue.

Respectfully submitted,

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